INSTRUMENTS AND CONTROL SYSTEMS

INDEX TO VOLUME 42, 1969

This index is a guide to titles, authors, and subjects of articles published during 1969. Indices to featured and advertised products appear in each monthly issue.

Note: numbers in boldface type refer to the month of issue.

SUBJECT

Analog 1:21, 45, 53, 80, 81; 5:117, 130; 9:115, 174; 11:123
Acoustic 4:93; 5:101; 10:107
Circuits 2:77, 83; 3:133; 5:114, 135; 10:115; 11:135
Computer 1:49, 53, 62, 65, 80, 81; 3:137, 140; 5:97, 130; 6:85; 7:79; 8:8, 60, 63, 69, 92, 108, 114; 9:147; 10:48, 126; 12:12, 14, 30, 67
Control 1:71; 2:113; 3:99, 133; 5:79, 89, 97, 109; 6:91, 97, 103, 136; 7:91; 8:8, 89, 118; 9:115, 141, 147, 158, 165; 10:46, 126; 11:22, 99, 12:11, 16, 18, 22, 67, 75
Data 2:123; 3:137, 140; 4:111; 5:131; 6:125; 12:26
Digital 2:89, 91; 4:103, 113; 5:97, 109, 131, 132; 7:9, 57; 8:8, 60, 63, 69, 92, 102, 114, 118; 9:10, 115, 147, 169; 10:126, 133; 11:22; 12:12, 14, 18, 30, 71, 104
Display 1:70, 71, 73; 2:91, 122; 4:103; 5:10, 85, 89; 6:117; 7:8, 9, 57, 73, 77, 105; 12:26, 67, 104
Electric-Electronic 1:42, 45, 70; 2:75, 77, 83, 87, 91, 101; 3:138; 4:103, 126; 5:74, 114; 6:115; 7:83, 85; 8:105, 109, 118; 9:153, 161, 165; 11:129, 135; 12:28, 97
Flow 3:83, 87, 95, 115; 5:120; 6:81, 120, 133; 7:97, 100; 11:26, 95; 12:91, 101
Fluid 1:75; 2:113; 4:89; 5:79, 127; 9:141; 11:18
Fluidics 3:91; 6:91, 103, 136, 138; 8:116
Hardware 9:33; 12:75
Mathematical 1:49, 62, 65, 67, 80, 81; 2:98; 4:111, 119; 5:130; 6:113, 125; 8:59; 10:119; 12:63, 87
Mechanical 2:105; 4:82, 87, 89, 127, 128; 5:131; 7:95; 9:158, 161, 165; 10:115, 137; 11:21
Optical 2:109; 4:130; 6:117, 123; 7:91; 11:118
Pressure 3:99, 105; 4:97; 5:115, 120; 6:120; 10:46; 11:81, 87, 99; 12:104
Process 2:89, 117; 3:131; 4:97; 5:85, 88, 97, 127; 7:83; 8:99, 109; 9:11, 145; 11:18, 118; 12:67
Simulation 1:67; 4:113; 5:117; 8:99; 9:169; 11:123
Standards Calibration 3:95, 109; 5:105; 6:137; 7:97; 10:85; 11:87
Telemetry 4:89; 5:81; 7:103; 10:115
Temperature 2:117; 5:81, 105, 132; 7:104; 8:102; 9:113; 10:48, 58, 60, 81, 85, 91, 95, 100, 107, 111, 140; 11:24, 79; 12:71, 85
Timing 2:121; 3:91, 139; 4:81; 5:73; 6:79; 7:55; 12:20

TITLE

AC Adjustable Speed Drives 9:165
AC Power Conditioning 4:126
Adaptive Controls, Part 1: A Survey 9:147
Adaptive Controls, Part 2: Self-Organizing Systems 10:126
Air Density Measurement 4:89
Aircraft Weighing System 4:127
Analog Differentiation 1:80
Analog Differentiation 1:62
Analog Integration 1:49
Analog Multiplier 5:130
Analog Operations 1:81
Analog Pulse Divider 1:45
Analog-to-Digital Converter Survey 9:115
Analysis of Experimental Data 6:125
Annular Orifice Measurement 11:95
Annunciator Review 5:89
Automated Laboratory Instrumentation 12:14
Automatic Fluidic Handler 8:116

Background Variations in Optical Scanning 6:117
Barrier Methods of Safety 7:83
Basic Heat Flow Calibration 5:105
Bearing Load Transducer 4:87
Brayton Cycle Simulation 11:123

Calibration of Standard Leaks 5:127
Capacitive Moisture Measurement 3:131
Causality 8:59
Certain Vertigo, A 12:63
Circuits for Transfer Functions 1:67
Close Tolerance Tubing 4:127
Computer Acquisition System 3:140
Computer-User Study 8:114
Computerized Production Control 12:30
Constant Output DC to DC Converter 6:115
Constant Pressure Microgasometry 4:97
Control/Display Location Coding 1:71

Data Acquisition System 3:137
DC to DC Conversion 2:83
Decentralized Automation Terminals 8:60
Describing Function Analysis of DC Servo Motor 2:105
Design Concepts for Digital Voltmeters 2:71
Differential Pressure Transducer Evaluation 3:109
Digital Clock 3:139
Digital Pressure Indicator 12:104
Digital Recorder Survey 7:57
Digital Recording Techniques 7:9
Digital Resistance Thermometer 5:132
Digital Simulation Stability Criterion 4:113
Digital System for Fast Memory Printout 7:79
Digital Systems 12:12
Digital Thermometry 8:102
Digital Transducers 9:10
Digital Voltmeter Survey 4:103
Direct Digital Control 8:8
Direct FM Tape-to-Digital Conversion 7:92
Direction of Time, The 7:55
Dynamic Pressure Generation for Transducer Evaluation 11:87

Electrolytic Log-Root Computer 1:65
Electromagnetic Accelerometer 4:82
Electromechanical Counting and Control 12:20
Energy Conversion Transducers 7:95
Engineering Applications of Ultrasonics 4:93
Experimental Frequency Response Determination 6:113
Explosive Initiation Evaluation 10:140

Flow Rates from Pressure Drop Measurements 6:120
Flow Recorder Calibration 7:97
Flowmeter Survey 3:115
Flowmeter Survey Addendum 7:100
Fluid Control Review 6:103
Fluid Controls Institute 12:24
Fluid Power Standards 6:137
Fluidic Decimal Counter 6:97
Fluidic Logic Design 6:138
Fluidic Logic for Pneumatic Stepping Motor 6:91
Fluidic Oscillator Design 3:91
Fluidic Test Machine Control 6:136
Fluidic Velocity Sensor 6:81
Frequency Domain Oscilloscope 2:122
Friction in Pipe Flow 12:91

Graphic Recording 7:8
Ground Circuits 11:135
Grounding With Isolation Transformers 3:138

Heater Control for Optical Filters 7:91
High Density Manual Switches 12:28
High Force Geared Actuators 1:75
High Pressure Drop Valves 9:141
Hot-Film Anemometry in Liquid Mercury 3:83
Hot-Wire Measurements in Non-Isothermal Flow 3:87
Hybrid Temperature Programmer 11:24
Hydraulic Calibration Laboratory 3:95
Hydraulic-Magnetic Circuit Breakers 2:87

Impact Measurement With FM/AM Telemetry 10:115
Industrial Air Filtration 11:18
International Practical Temperature Scale of 1968 10:85
Intrinsic Safety 9:11
Intrinsic Safety in Refineries 5:74
Intrinsically Safe Annuciators 9:145
IR Heating Transducer 7:104
ISA Show Preview 9:33

Jet Engine Data Monitoring 8:85

La Puissance Motrice de Feu 11:79
Laser Display Systems 2:109
Laser and Inspection Cost Savings, The 4:130
Level and Flow Measurement with ΔP Cells 5:120
Logarithmic Systems Analysis Plots 4:119
Logic Modules 8:9
Low-Level Multiplexing 10:133
Low Voltage Carrier Telemetry 7:103

Magnetic Turbine Flowmeters 6:133
Manometers for Rotating Systems 3:105
Mechanical Counter Survey 12:75
Measurement of Time: 1, The 4:81
Measurement of Time: 2, The 5:73
Mechanical Impedance Techniques 10:119
Microfilm Scratch Recorder 7:105
Multipoint Temperature Measurement 5:81

Negative Absolute Temperature 10:81
Noise in Control Signals 9:153
Non-Gaussian Data 3:123
Numerical Control 12:18
Numerical Power Control 12:71
Numerical Prediction of Transfer Functions 5:109

On-Board Spacecraft Processor 8:63
Open-Loop Numerical Control 8:89
Operational Amplifier Survey 1:53
Output Impedance Measurements 2:75
Oxygen Deficiency Alarm 5:85

Permanent-Magnet DC Motors 9:158
Phase and Frequency Measurement 8:105
Phase Angle and Integral Cycle Control 2:101
Phase Sequence Detection 5:114
Photographic Characteristics of Water Pollution 11:118
Piezoelectric Accelerometer 4:128
Pipeline Control System 8:118
Pitot Voltmeter 11:26
Pneumatic Control System 5:79
Pneumatic Pressure Sensing, Timing, and Signal Conversion 2:113
Positive Displacement Gas Measurement 12:101
Precision Logarithmic Amplifier 7:85
Pressure Gage for High Noise Environment 5:115
Pressure Ratio Computer 6:85
Pressure Relief Devices 3:99
Pressure Switch Survey 11:99
Process Simulation: An Example 8:99
Program Controllers 12:16

Quantizer Simulation 5:117

Radiation Hardened Integrated Circuits 5:133
Radiation Pyrometry 10:58, 59
Recording Charts 7:77
Removing Logical Redundancy 2:98
RMS Voltmeters in Dynamic Testing 9:161
Rotor Blade Repair 11:21

Safe Electrical Practices in Hazardous Areas 8:109
Self-Heated Thermistor Circuits 10:100
Shaft Angle Encoder 5:131
Shock Signal Integrator 9:174
Signal Conditioning 2:77
Signal-to-Noise Enhancement 11:129
Simplified Simulation of the Elovich Equation 8:108
Simulation With Fast Fourier Transform 9:169
Solid State Inverter 3:133
Solid State Temperature Measurement 10:60, 62
Spacecraft Controller 11:22
State Variable Formulations 12:87
Stepping Rotary Programmers 12:22
Strain Gage Misalignment Errors 10:137
Survey of Small Computers 8:69
Switchboard and Panel Instruments 1:70
Systems Approach, The 12:11

Tape Recorder Calibration 7:73
Techniques of Digital Recording 1:73
Temperature Control of Valve Stem Packing 2:117
Temperature Sensor Installation 12:85
Thermal Expansion Measurement 10:91
Thermistor Survey 10:95
Thermocouple Linearization Parameters 10:48
Thermocouples and Extension Wires 10:111
Thermodynamic Temperatures 9:113
Thyratron Light Source 6:123
Time Code Data Correlation 2:121
Time Division Multiplex Recording 12:26
Time Domain Specifications of Digital Controllers 5:97
Transducers and Operational Amplifiers 1:42
Transient Protection 8:118
Tuning Controllers for Setpoint Changes 12:67
Tuning PI and PID Digital Controllers 2:89

Ultrasonic Imaging 5:101
Ultrasonic Thermometry 10:107
Uncertainties in Iterative Solutions 4:111
Uniformity of Time, The 6:79

Vacuum System Controller 10:46
Vibrating-Contact Presure Transducer 11:81

Weld Quality Monitor 12:97

AUTHOR

Acharya, G. N. 2:105
Amendola, F. A. 12:28
Anderson, J. 12:71
Arya, S. P. S. 3:87

Bachich, M. 3:140
Barker, W. 3:138; 4:126
Baty, G. B. 8:89
Bean, J. D. 11:26
Beard, C. S. 1:75; 3:99; 9:141
Belsterling, C. A. 6:136
Belz, R. A. 6:123
Benedict, R. P. 4:11; 6:125; 10:85; 12:91
Billig, L. O. 9:147; 10:126
Birman, P. 2:75
Blanchard, K. 8:116
Bowser, M. L. 5:85
Boyle, W. C. 11:118
Bragg, G. M. 3:105
Brigham, E. O. 9:169
Buntenbach, R. W. 11:135
Butler, H. D. 12:30
Byrd, J. S. 7:79

Cadman, T. W. 5:109
Caldwell, B. J. 7:97
Carlson, R. 2:122
Campagnuolo, C. J. 3:91
Cereijo, M. R. 12:87
Chinn, G. I. 2:117
Cooley, W. C. 6:91
Cooper, D. 2:83
Corwell-Kulesza, G. G. 8:109
Cowherd, W. F. 5:109
Curran, D. A. 5:115

Daniel, R. G. 6:113
Darwood, N. 2:98
Dellert, R. C. 6:138
Dernehl, J. U. 12:28
Devaney, A. J. 2:109
Doeleman, H. 1:42
Doig, G. 2:113
Dunn, L. B. 7:77

Ebert, J. 2:121
Ensminger, D. 5:101
Erlandson, J. C. 9:158
Etzel, J. G. 12:97
Evans, J. 10:140

Fam, S. S. 10:107
Femling, D. 3:133
Finkle, B. J. 4:97
Fiore, M. V. 1:71
Fuller, W. R. 5:79

Gehmlich, D. K. 4:82
Gettelman, C. C. 3:109
Goldwater, F. J. 5:81
Gow, J. L. 6:120
Guerreri, G. 11:95

Haas, P. 8:102
Halligan, J. W. 5:133
Harrison, Dean R. 10:115
Hartenstein, R. 8:63
Haycock, O. C. 4:89